Listing of Claims

IN THE CLAIMS:

The following listing of claims is intended to supercede all previously filed listings of claims. Changes are shown with deletions in ~~strikethrough~~ and additions underlined.

Claim 1 (Currently Amended). An apparatus for digitally compensating the reception of radio ~~frequencies~~ frequency signals, comprising:

a first oscillator;

a downconverter driven by ~~said~~ the first oscillator, ~~said~~ the downconverter having a mixer;

a first frequency monitor adapted to measure the frequency of the first oscillator;

a second oscillator;

an analog-to-digital converter driven by ~~said~~ the second oscillator;

a digital receiver driven by ~~said~~ the second oscillator, ~~said~~ the digital receiver having a numerically controlled oscillator;

a second frequency monitor adapted to measure the frequency of ~~said~~ the second oscillator;

a digital demodulator; and

a computer adapted to receive the frequency measurement of ~~said~~ the first oscillator from ~~said~~ the first frequency monitor, to receive the frequency measurement of ~~said~~ the second oscillator from ~~said~~ the second frequency monitor, to calculate the errors of ~~said~~ the first oscillator and ~~said~~ the second oscillator, to calculate a frequency error produced by ~~said~~ the mixer, and to calculate a numerically controlled oscillator setting;

wherein ~~said~~ the numerically controlled oscillator is adapted to receive ~~said~~ the numerically controlled oscillator setting from ~~said~~ the computer to cause ~~said~~ the digital receiver to transmit a signal of a desired frequency to ~~said~~ the digital demodulator.

Claim 2 (Currently Amended). An apparatus for digitally compensating the transmission of radio ~~frequencies~~ frequency signals, comprising:

a first oscillator;

a digital modulator having a numerically controlled oscillator and a mixer, wherein ~~said~~ the digital modulator and ~~said~~ the numerically controlled oscillator are driven by ~~said~~ the first oscillator;

a first frequency monitor that is adapted to measure the frequency of ~~said~~ the first oscillator;

a digital to analog converter driven by ~~said~~ the first oscillator;

a second oscillator;

an upconverter driven by ~~said~~ the second oscillator;

a second frequency monitor adapted to measure the frequency of ~~said~~ the second oscillator;

a computer adapted to receive the frequency measurement of ~~said~~ the first oscillator from ~~said~~ the first frequency monitor, to receive the frequency measurement of ~~said~~ the second oscillator from ~~said~~ the second frequency monitor, to calculate the errors of ~~said~~ the first oscillator and ~~said~~ the second oscillator, to calculate a frequency error produced by ~~said~~ the upconverter, and to calculate a numerically controlled oscillator setting;

wherein ~~said~~ the numerically controlled oscillator is adapted to receive ~~said~~ the numerically controlled oscillator setting from ~~said~~ the computer to cause said upconverter to transmit a signal of a desired frequency ~~to an antenna~~.

Claim 3 (New). The apparatus of claim 1 further comprising:

an antenna, the antenna being electrically coupled to the downconverter.

Claim 4 (New) The apparatus of claim 1 wherein the downconverter is configured to output a frequency band that is configured to contain a plurality of radio channels.

Claim 5 (New). The apparatus of claim 1, wherein the digital receiver is configured to select a radio channel from a plurality of radio channels.

Claim 6 (New). The apparatus of claim 1, wherein the radio frequency signals are GPS signals.

Claim 7 (New). The apparatus of claim 2 further comprising:

an antenna, the antenna being electrically coupled to the upconverter.

Claim 8 (New). The apparatus of claim 2, wherein the numerically controlled oscillator is configured to receive a frequency setting from the computer to compensate for inaccuracies of the oscillator.

Claim 9 (New). The apparatus of claim 2, wherein the digital modulator is configured to output a digital intermediate frequency to the digital to analog converter, and the digital to analog converter is configured to convert the digital intermediate frequency to an analog signal.

Claim 10 (New). The apparatus of claim 2, wherein the upconverter is configured to receive an analog signal from the digital to analog converter, the upconverter being configured to upconvert the analog signal to a desired transmission frequency.

Claim 11 (New). The apparatus of claim 2, wherein the radio frequencies are GPS radio frequencies.

Claim 12 (New). An apparatus for digitally compensating the reception of radio frequency signals, comprising:

an oscillator;

a downconverter driven by the oscillator, the downconverter having a mixer;

a frequency monitor adapted to measure the frequency of the oscillator;

an analog-to-digital converter driven by the oscillator;

a digital receiver driven by the oscillator, the digital receiver having a numerically controlled oscillator;

a digital demodulator; and

a computer adapted to receive the frequency measurement of the oscillator from the frequency monitor, to calculate an error associated with the oscillator, and to calculate a

frequency error produced by the mixer, and to calculate a numerically controlled oscillator setting;

wherein the numerically controlled oscillator is adapted to receive the numerically controlled oscillator setting from the computer to cause the digital receiver to transmit a signal of a desired frequency to the digital demodulator.

Claim 13 (New). The apparatus of claim 12 further comprising:

an antenna, the antenna being electrically coupled to the downconverter.

Claim 14 (New) The apparatus of claim 12 wherein the downconverter is configured to output a frequency band that is configured to contain a plurality of radio channels.

Claim 15 (New). The apparatus of claim 12, wherein the digital receiver is configured to select a radio channel from a plurality of radio channels.

Claim 16 (New). The apparatus of claim 12, wherein the radio frequency signals are GPS signals.

Claim 17 (New). An apparatus for digitally compensating the transmission of radio frequencies, comprising:

an oscillator;

a digital modulator having a numerically controlled oscillator and a mixer, wherein the digital modulator and the numerically controlled oscillator are driven by the oscillator;

a frequency monitor that is adapted to measure the frequency of the oscillator;

a digital to analog converter driven by the oscillator;

an upconverter driven by the oscillator;

a computer adapted to receive the frequency measurement of the oscillator from the frequency monitor, to calculate an error associated with the oscillator, to calculate a frequency error produced by the upconverter, and to calculate a numerically controlled oscillator setting;

wherein the numerically controlled oscillator is adapted to receive the numerically controlled oscillator setting from the computer to cause the upconverter to transmit a signal of a desired frequency to an antenna.

Claim 17 (New). The apparatus of claim 16, further comprising:

an antenna, the antenna being electrically coupled to the downconverter.

Claim 18 (New). The apparatus of claim 16, wherein the numerically controlled oscillator is configured to receive a frequency setting from the computer to compensate for inaccuracies of the oscillator.

Claim 19 (New). The apparatus of claim 16, wherein the digital modulator is configured to output a digital intermediate frequency to the digital to analog converter, and the digital to analog converter is configured to convert the digital intermediate frequency to an analog signal.

Claim 20 (New). The apparatus of claim 16, wherein the upconverter is configured to receive an analog signal from the digital to analog converter, the upconverter being configured to upconvert the analog signal to a desired transmission frequency.

Claim 21 (New). The apparatus of claim 16, wherein the radio frequencies are GPS radio frequencies.